SCR & SER Forest Health Update

Wisconsin DNR, Forest Health Protection Unit **September 9, 2005** **Vol. 2 No. 4**

About this newsletter

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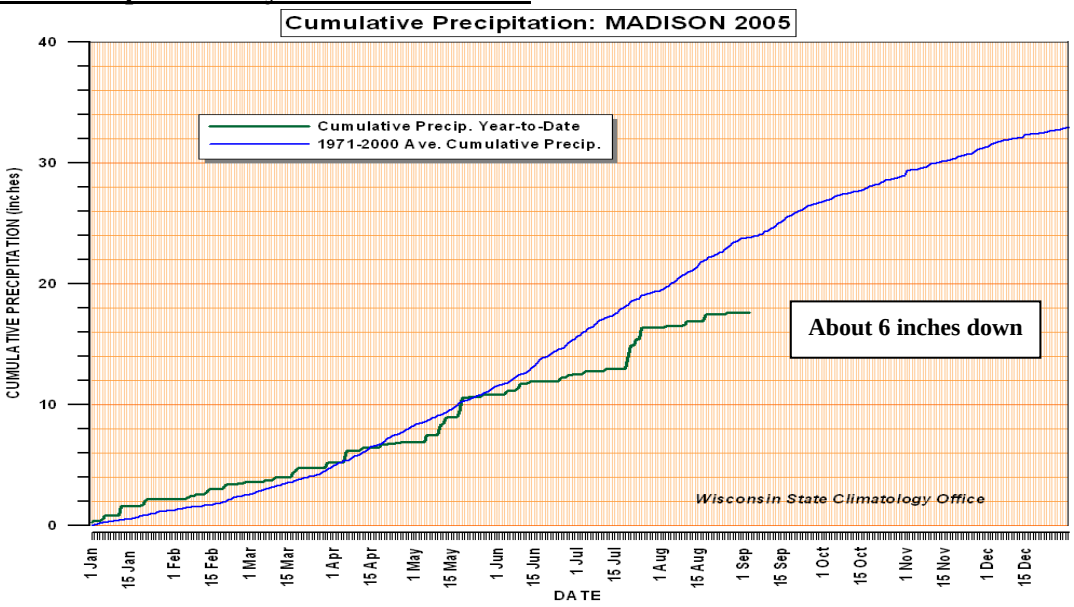
If you would like to subscribe to this newsletter, please contact Kyoko Scanlon at Kyoko.Scanlon@dnr.state.wi.us

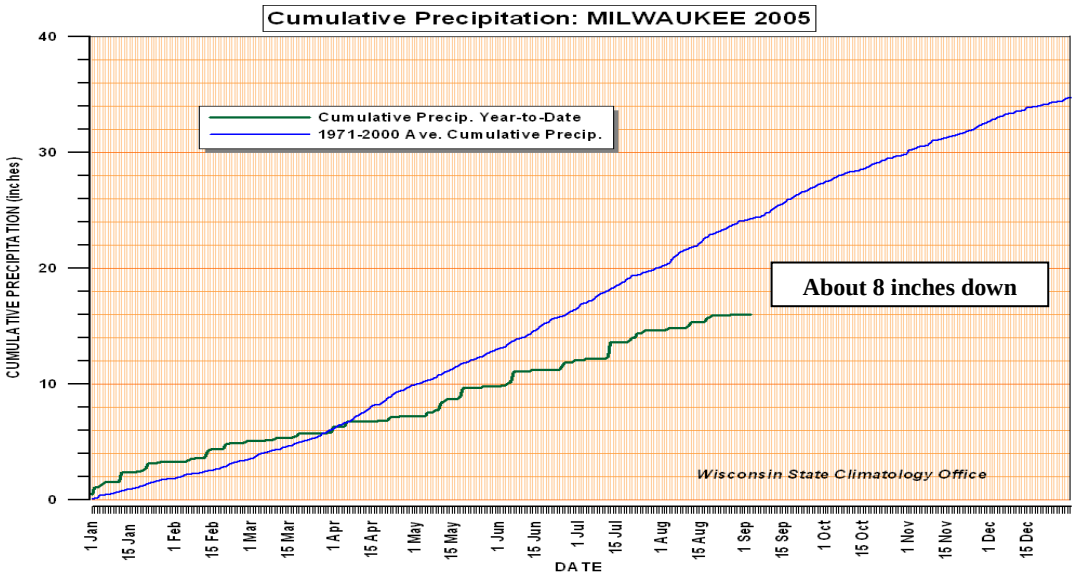
"SCR & SER Forest Health Update" is an informal newsletter created by the Wisconsin DNR, Forest Health Protection Unit. The purpose of this newsletter is to provide foresters in the South Central Region and Southeastern Region with regional up-to-date forest health information. This newsletter will be issued monthly during the growing season and on an irregular basis during winter as topics come up.

We appreciate your comments

Thank you for providing us with your comments on the previous issues of this newsletter. Based on your feedback, we decided to continue to include color photos in our newsletter though we will make special efforts to keep the file size relatively small. If you need a text only version, please let us know. We also continue to welcome your comments/suggestions on this newsletter and your reports on forest health problems you observed in your area.

SCR/SER weather updates – dry conditions continue





This year, throughout the growing season, total precipitation continued to be much lower than average. As the charts from the previous page show, as of September 1, total precipitation is 6 inches below normal in Madison and 8 inches in Milwaukee. The dry condition has also been observed in other parts of the state as total precipitation is 9.2 inches below normal in Wausau and about 6.8 inches below normal in Rhinelander.

Interveinal necrosis on red oak (Photo by Jane Cummings-Carlson)

With hot and dry weather continuing through the summer, some trees started to show immediate symptoms of drought damage. These symptoms include wilted or rolled-up leaves, necrosis/chlorosis on leaves, premature coloration on leaf margins and premature leaf drop. At this point, these symptoms are seen most commonly on street or yard trees that already suffer some stress or that have root problems, such as girdled roots or near pavement. Furthermore, mortality of first year plantings has also been becoming more noticeable. As of July, survival surveys of first year planting in Spring Green showed 32 percent mortality (deciduous and conifer trees combined). Survival rate of conifers was much worse (50% mortality) than deciduous seedlings (20% mortality) at the site, and replanting of conifers on this stand is being scheduled for the next spring.

Drought symptoms on maple

With this continuing hot and dry condition, more destructive long-term effects of drought may show up on established trees later. Severely damaged trees may show top dieback, and stressed trees may later be attacked by opportunistic pests. For example, stressed oak trees are often attacked and killed by secondary pests, such as the two-lined chestnut borer and Armillaria root rot.

For more information about drought injury, please visit http://www.colostate.edu/Depts/CoopExt/4DMG/Garden/drought6.htm. Precipitation charts were created by Sally Dahir. Thank you, Sally.

Late-Season Leaf Discoloration of White and Bur Oak: Drought/Tubakia Leaf Spot/Two-lined Chestnut Borer
This year again we have been observing late-season leaf discoloration on white and bur oak. Below is an excerpt from a one-page factsheet that was developed by Jane Cummings-Carlson.

History and Symptoms: For the past several years, the foliage on white and bur oaks in southern Wisconsin has been turning brown and shriveling up in August and September. These symptoms begin to show in the lower part of the crown and progress upward. By mid-September, a severely affected tree may appear to be dead, with no green foliage. Other trees, less severely affected, may only show symptoms on the lower half of the crown. In most cases, these trees will produce foliage the following spring, yet twig and branch dieback and in rare cases mortality may occur.

Bur oak on south-facing slope severely affected by Tubakia leaf spot and infested with the two-lined chestnut borer in the upper crown.

Ridgetop Bur and white oaks severely affected by Tubakia and infested with the two-lined chestnut borer. Affected trees died in 2004.

Brown spots caused by Tubakia dryina

Potential Causes: Observations over the past three years have revealed the presence of a leaf spot fungus, *Tubakia dryina*. This fungus has been detected on oak in Wisconsin for many years and can infect all of Wisconsin's native oak species. Typically, Tubakia does not cause significant damage to a tree but does give the tree a "sick" or "unthrifty" appearance. Coincidentally, Wisconsin has been experiencing a drought during the summers of 2001, 2002 and 2003. This drought compromised the health of many trees, including the white and bur oaks. The two-lined chestnut borer, *Agrilus bilineatus*, has been found infesting the top branches of white and bur oaks affected by Tubakia. The combination of drought, Tubakia and two-lined chestnut borer has overcome some of these oaks and caused mortality. Mortality has not been common but has been observed on ridgetops and south and west facing slopes with shallow soils.

Biology and Management: Tubakia overwinters on infected twigs and leaves. During the summer, spores are produced on this infected material and are spread by wind and rain. Removing and destroying fallen infected leaves may reduce the amount of spores at the local level and be an option for disease management for a yard tree. During the growing season, water oak trees during prolonged dry periods. In the forest, follow forest management practices that reduce stress and favor vigorous crown development. This will minimize the effects of both Tubakia and the two-lined chestnut borer. Controlled burning will destroy infected leaves on the ground and reduce the local source of inoculum but this disease is so widespread in the forests of southern Wisconsin the impact of reducing disease through local control is unknown.

Hickory mortality

In recent years, hickory mortality has been reported throughout SCR. In Festge County Park, the dieback and mortality of hickory has been observed in recent years, and dozens of trees have been removed. As a matter of fact, this summer, reports of hickory mortality have come in from northeastern Wisconsin and southeastern Minnesota.

A similar mortality was also observed in Wisconsin in the 1960's. In the late 1950's to early 1960's, as much as 100 percent mortality of bitternut hickory was recorded in southern Dane and Rock Counties. The morality was attributed to infestations by the Hickory bark beetle (*Scolytus quadrispinosus*). Shagbark hickory was also infested, but not to the level of bitternut hickory. Recent research found that the mortality is associated with the hickory bark beetle and possibly the fungus *Ceratocystis* spp.


Hickory mortality, Festge Co.Park
(Photo by Mark Guthmiller)

Larvae of Hickory Bark Beetle (*Scolytus quadrispinosus*) attack and kill hickory trees by mining the phloem. In general, vigorous trees are not attacked by this insect for breeding purposes. Shagbark and bitternut hickories are commonly attacked by this insect. Infested trees will show wilted leaves, twig and branch dieback, and often die. Feeding galleries are centipede-shaped and etched on the interface of sapwood (width 5-6 cm). Adults are short, stout, dark brown to black beetles, and are 4-5 mm in length. Currently, management practice of this insect is to destroy trees harboring overwintering larvae during winter and spring. Infested trees can be cut and burned or submerged in water. An alternative is to peel the bark or spray with an insecticide before emergence begins in May or June. At this point, little is known about the relative role of the fungus *Ceratocystis* spp. and its distribution in Wisconsin.

Two additional beetles have been associated with the hickory mortality at Festge County Park. The hickory agrilus (*Agrilus otiosus*) and the red-shouldered bostrichid (*Xylobiopsis basilaris*) have been recovered from this site, and may also be playing a role in the hickory mortality. Fresh cut hickory logs may also be attacked by Painted hickory borer (*Megacyllene caryae*). From a hickory mortality site in Baraboo, extensive infection by Armillaria root rot was observed on some of the recently killed trees as well as hickory bark beetle exit holes. However, signs of hickory bark beetle or Armillaria was not consistent with all of the dead and dying trees. The relative importance of Armillaria in hickory mortality is unknown.

Information on hickory mortality (Pest alert) http://www.na.fs.fed.us/spfo/pubs/pest_al/hickory/hickory.htm

Hickory bark beetle info: http://www.barkbeetles.org/hardwood/hbb.html

Hickory agrilus gallery signs:
http://www.invasive.org/browse/detail.cfm?imgnum=3066068
http://www.invasive.org/browse/detail.cfm?imgnum=3066065

Red-shouldered bostrichid beetle info: http://www.forestpests.org/borers/redshoulderedbost.html

Gypsy moth update

Female gypsy moth laying egg mass with an *Ooencyrtus* wasp close behind (Photo by Jeff Roe)

Gypsy moth activity is starting to settle down for the year. Due to the warm spring and summer, gypsy moth development has been about two weeks ahead of normal. Adults have emerged from pupae and most of the females have finished laying eggs. The eggs will now over-winter and new caterpillars will hatch next spring. The population continues to be down in southeastern Wisconsin with a few reports of individual caterpillars and egg masses. Based on reports in so far, no defoliation is expected in that part of the state for next year. Dane and Rock Counties in south central Wisconsin have experience a population increase in scattered areas.

In Dane County isolated infestations in Sun Prairie, Madison, Middleton, and the Town of Cross Plains have egg mass numbers high enough to cause light to moderate defoliation in those areas. A few individual trees may experience heavy defoliation. In Rock County, both the Town and City of Beloit have isolated populations high enough to cause moderate to heavy defoliation next year. Efforts are underway to establish a gypsy moth suppression program in these two counties.

Now through fall is a good time to be checking your property for egg masses to determine if you have a building population of gypsy moth that may cause damage to your trees next year. We recommend you wait until after the first hard frost to conduct any egg mass oiling or removals to allow for the egg parasitic wasp, *Ooencyrtus kuvanae*, to finish its life cycle.

Gypsy Moth Suppression Program Training Sessions Scheduled

Gypsy moth populations are at or approaching outbreak levels in parts of northeast, south central and central Wisconsin. Although gypsy moth populations crashed in southeast Wisconsin in 2004 this year's dry weather has been conducive for gypsy moth survival. As the gypsy moth population increases there may be a need for control measures.We will be holding a training session regarding the DNR gypsy moth suppression program geared for forestry consultants, county, municipal, and volunteer staff that may be directly involved with gypsy moth control activities. The training session will cover details and requirements for cost shared aerial sprays, how to apply for the program, what work will be required and how to delegate tasks. In addition, we will cover how to survey areas for eligibility and how to map and create spray blocks. To register, contact Mark Guthmiller at (608) 275-3223 or by email at mark.guthmiller@dnr.state.wi.us.

Two sessions are scheduled for southern Wisconsin:

Friday, October 7: Fitchburg, Dane County
- 9:30 a.m. - 12:00 p.m.
- DNR Service Center, 3911 Fish Hatchery Rd.

Monday, October 10: Brookfield, Waukesha County
- 9:30 a.m. - 12:00 p.m.
- Brookfield Public Library, 1900 N. Calhoun Rd. (~1.5 miles north of Hwy 18, near the corner of Calhoun & Gebhardt)

Asian longhorned beetles found in California

In July, two Asian longhorned beetles were found outside a warehouse near Sacramento. Officials suspect that they arrived in a shipment of tiles from China about a month earlier. Hundreds of trees in the area near the warehouse were inspected, however no sign of infestation has been found. The site will be closely monitored for the detection of this exotic beetle.

Asian longhorned beetles are native to Asia. Larvae of the beetles kill trees by tunneling into the wood. Since the initial finding in New York in 1996, the infestations by this insect have been found in New York, Chicago, and New Jersey. Hosts include maple, birch, elm and poplar. Though dead adult beetles have been found in a warehouse in southern Wisconsin, no signs of infestation on trees by this insect has been detected in Wisconsin yet.

Elm flea weevil

Elm flea weevil and feeding damage (Photo by Mark Guthmiller)

Elms were observed being defoliated this summer in Rock and Kenosha Counties. Steve Krauth, at the UW-Madison entomology department, identified the insect causing the damage in Rock County as the elm flea weevil (*Orchestes alni*). The elm flea weevil first showed up in Wisconsin in 2003. It has primarily been observed feeding on Chinese and Siberian elms. Management for this pest includes maintaining tree health through proper watering, fertilizing, pruning and mulching. For more information go to the following web site and scroll down to the bottom page of the "Plant Health Care Report": http://www.mortonarboretumphc.org/PHC%20report%20pdfs/042205%20Issue%202.pdf

Weevils at home

The presence of many black tiny insects has been reported in Sauk City and Poynette. These insects are found not only out in the yard, but also inside the houses, especially in damp areas such as kitchens, bathrooms and basements. These are root weevils. Weevils that enter houses are sometimes collectively called "nuisance weevils". They are not harmful to humans, except they cause nuisance. They don't carry human diseases or damage the structure of the houses. The ones found in the houses are entering from outside through cracks around windows, doors, siding and so on. For more information about weevils at home and control approaches, please visit the University of Wisconsin Extension at http://www.uwex.edu/ces/wihort/pests/ControlWeevils.htm.

Other pest problems

Imported willow leaf beetle – Feeding on leaves was observed on willow in Dane County. For more information see: http://www.ext.vt.edu/departments/entomology/factsheets/willbeat.html

Imported willow leaf beetle adults (photo by Mark Guthmiller)

Oak apple galls – Galls on oak leaves were common in SCR.
Coccomyces leaf spot on Cherry (*Blumeriella jaepii*) – Scattered light defoliation was observed on black cherry in Washington Co.

The Annual Report of Forest Health Conditions 2004 available on-line

The Annual Report of Forest Health Conditions, 2004 is available on the DNR forestry website: http://dnr.wi.gov/org/land/forestry/Fh/AnnualReport/AnnualReport2004.pdf. This comprehensive report of forest health issues is produced annually by forest health protection staff. The 2004 report features an "alerts" section that highlights new and emerging forest health issues, text and maps detailing the status of major forest health issues and special reports related to ongoing survey and research projects. The special reports section includes results of surveys for the Emerald Ash Borer and *Phytophthora ramorum* - the cause of Sudden Oak Death and a status report of the red pine pocket mortality cooperative research project. The short version of this report, Wisconsin Forest Health Highlights 2004, features major pest problems/issues in Wisconsin in 2004, and is also available at http://dnr.wi.gov/org/land/forestry/Publications/FHH04.pdf.

Please report to us

We appreciate reports of forest health problems in your areas. Currently, there is no regional forest health specialist in SCR or SER. Until the situation changes, please contact the following staff for regional forest health problems/questions. Thank you.

For general forest health issues	
Jane Cummings-Carlson (northern part of SER)	608-275-3273
Kyoko Scanlon (southern part of SER, and SCR)	608-275-3275
For gypsy moth	
Andrea Diss (Statewide issues)	608-264-9247
Mark Guthmiller (SCR/SER)	608-275-3223
Emerald ash borer hotline	1-800-462-2803
Gypsy moth hotline	1-800-642-MOTH

Forest Health web site: http://www.dnr.state.wi.us/org/land/forestry/FH/
Gypsy Moth web site: http://www.gypsymoth.wi.gov